

## The Winston Churchill Memorial Trust Of Australia

Report By - Naomi Ingleton - 2011 Churchill Fellow

THE JACK GREEN FELLOWSHIP to study the application of culture and production methods used by the best cultured butter producers in Europe - Sweden, France

I would like to acknowledge Mr Neville Miles who raised the funds to support my fellowship, I thank you for the opportunity of a lifetime.

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Signed Naomi Ingleton

Dated 25/6/12

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# FELLOWSHIP REPORT

Study of the application of culture and production methods used by the best cultured butter producers in Europe - Sweden, France

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Naomi Ingleton

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# INTRODUCTION

Having never been in another butter factory other than my own, this experience has been amazing, I was able to work with the most talented and respected artisan butter makers in the world. I would like to acknowledge Mr Neville Miles who made my trip possible. I thank you for your fundraising efforts and support of the Jack Green memorial Churchill Fellowship. A surprise of my trip is meeting a lot of chefs and media in the food world, I plan to do some work with the Cordon Bleu in Sydney on my return having visited the Paris school and meeting up with the media liaison and head translator.

Sweden was the place of innovation in food, Patrik works with the Nordic Food Lab and chefs ahead of their field in research of fermentation applications in foodstuffs not just dairy. Lactic bacteria are present in many foods and work with it is an ancient and lost art. I would like to thank Patrik and Zandra for taking me into their home and work place, I have learnt a huge amount from them and made some life long friends.

There are several factors that will affect the flavour of raw cream and pasteurized cream butter, some are more important to the taste than others.

1. The cream used. Terroir.
2. If the cream is soured or not.
3. The temperature and time used to sour the cream, lower and longer.
4. The type of equipment used to churn i.e. wood or stainless steel.

A.O.C (appellation, Origin controlee) is the main guarantee of quality assurance in France concerning butter. The production methods are standardised for production under the accreditation process.

I also learnt a lot about agritourism, it's a huge industry in France, many family holidays are spent on farms. I can apply many of the things I learnt to my own production and business and look forward to sharing this knowledge with visitors and other business in our region and industry.

# EXECUTIVE SUMMARY

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## **Project Description**

To study the application of culture and production methods used by the best cultured butter producers in Europe particularly Sweden and France.

## **Highlights**

### **Sweden**

Seeing another production method and type of butter made only by this producer, experimenting with some innovative techniques and being part of an experiment also dining at the worlds number 1 restaurant with one of its producers and Making some great lifelong friends

### **France**

Learning about A.O.C butter production from the worlds best producers, seeing applications and techniques I can apply to my own production in Australia. Seeing export opportunities and making contacts in the world market

## **Conclusion**

Wood is important in butter production and can be used without microbial contamination to the end product, in France it is considered vital to make the best butter. I also learnt that it is not important so much that the cream is from a certain breed of cattle or that the cream is pasteurised. What is important is how you treat your cultures and the temperature of your ferment. I plan to do more research on wood used in Dairy production and the effect of microbial in dairy products made using wooden equipment. How can we manage our process to allow us to use wood in our production.

# PROGRAM

## Week 1

### Sweden / Denmark - Floda, Naas Slott

Virgin butter is made at the Vallmobaekens smor in the Castle Naas Slott, Floda.

**Patrik Johansson**

## Week 2 / Week 3

### Poitou-Charentes, France

#### **Echire -**

One of the best known butters in the world. Looking at appellation control, what breed of cow and what butterfat content of the cream. What equipment is used in the packaging side and to also make pastry butter?

#### **Furmiere Beillaviere - Moucheceel**

Maker of raw cream butter for Alain Ducasse

**Pascal Beillaviere**

#### **Sevre et Belle**

Part of the Echire brand but at a different site

**Celles Sur Belle**

## Week 4/5

### Brittany / Normandy

#### **Beurre de Bordier**

Maison du Beurre - St Malo

Factory at Rennes

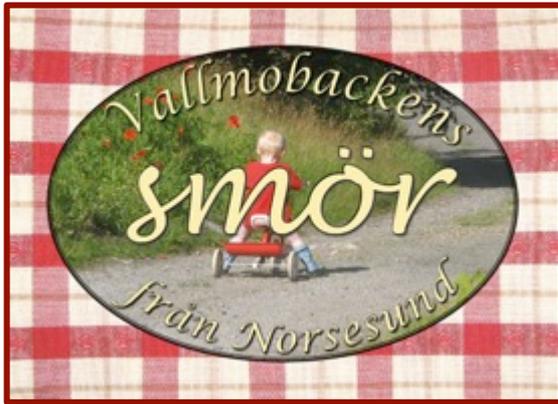
#### **Bienvenue La Ferme**

Multiple sites in Normandy on farm small processors and farm sales  
Cheese factories producing butter

# SWEDEN

## VALLMOBACKENS SMÖR

Sweden is a beautiful country, working with Patrick at Vallmoberken Smör was more about the meeting of minds than physical hard graft. We started off our week by doing a delivery of virgin butter to Noma in Copenhagen,



just voted the world number 1 restaurant for the third year in a row. I was very lucky.

We also delivered to several other Michelin restaurants on the way to Copenhagen, the chefs made me feel very welcome. Most of the kitchens had a token Australian who was brought out to meet me. It was easy to see they admired Patrik and had great respect for his butter. The chefs at Noma unlike any other place I had

ever seen, the kitchens were buzzing, they have many different areas in production. They were passionate about the produce and the producers. We were treated like royalty at dinner, 31 different dishes over 6 hours.

Patrik's production is not at all scientific, you will not find a pH meter or moisture meter or even a lab area in his production room. Sour milk is used to culture the cream by splashing it in the bottom of the drums and the cream poured in over the top. The cream is then left to sour until thickened at room temperature, this takes about 2 days. The cream is then chilled for later use. Patrik does not wash his butter, the buttermilk is drained and salt added then combined so the flavour is more acidic than what the Australian palate is used to. He does not make butter to any standardised production protocol.



Virgin butter is the point when the cream is just beginning to separate into butter, a little grain is starting to form and the buttermilk is just showing. The butter is very acidic at this point and you need to add a lot of salt to balance the flavour.



Patrick has been working with Ben Read from the Nordic Food Lab<sup>1</sup> to bury butter in a peat bog, we buried a little Myrtleford butter in this bog to be dug up in 2 years, 30 years and 50 years. In Ireland bog butter has been discovered from 3000 BC in an underground store.

There was evidence at the museum in Gothenburg of butter being used as a sacrificial offering in hollows made in rocks.

This history dating back to the Stone Age was amazing, quite hard for us to comprehend. Vallmobergens business model was a little confusing and a lot could be done to capitalize on the marketing of this product, and I will definitely do everything I can to help in any way

with advice and ideas, having had a first hand experience with the production, delivery and packaging.

Patrick sells his butter to a select few restaurants in Denmark and Sweden, he is trying to break into the English market. Logistics is proving an issue in Europe as well as Australia. Refrigerated transport is expensive and often involves several border crossings. Packaging of virgin butter is quite difficult because of the consistency. It needs to be in a closable container as it is a slight liquid form.

Patrick was working on making butter for cooking as another product to add to his range.

The Virgin butter is only used as a table butter as the moisture content would not make it suitable for frying, but with the virgin butter there is no buttermilk and the yield is 100%. In butter production your yield is only as high as the butterfat in the cream. Vallmobergen purchase cream from a local organic dairy in 20l cartons at 200l at a time, the cream is processed instantly as there is minimal refrigeration in the production room. Once soured and thick the cream is then placed in smaller containers to refrigerate.



<sup>1</sup> The Nordic food lab is located in Copenhagen and specializes in experiments with food

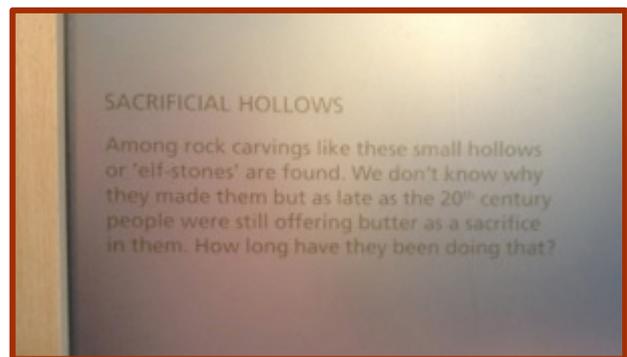
I saw very little evidence of product traceability or record keeping during production, also the production room was easily accessible by anyone within the building and a door missing on one exit.



I was fascinated by the sacrificial hollows on display at the museum in Gothenburg, to have a reference to the use and manufacture of butter from such primitive times was something I was surprised to find. I will continue to search for more

references of these.

Patrik is seems to be always seeking new flavours and ways to work with the cream. He performs many experiments using natural inoculant and flavourings. Things growing wild in the woods around the dairy. Many different things are used, like, stinging nettle, birch and grass. These experiments are a work in progress. A man and women butter was made using the hands of men dipped in one container of cream and the hands of women dipped in the other. This cream was left to sour naturally at room temperature and then churned. The women butter had the better flavour than the man butter.



Patrik is now feeding some chickens and pigs on the buttermilk, destined for the table at the best Swedish restaurant in Stockholm Frantzen Lindeberg. There is a respect for the produce and a child like wonder apparent in everything, although the butter production was not scientific in the traditional sense, it was free, experimental and invigorating. We need to relax, work with the produce. Think outside the square when it comes to potential new flavours.



I had a fantastic time in Sweden with Patrick and Zandra, they were so generous and treated me like family. Patrik is an exceptional butter maker and a freethinking spirit, it was exciting to be part of such a diverse thinking community of chefs and producers. They are at the forefront of gastronomy in the world.

# FRANCE

## POITOU-CHARENTES



### ECHIRE

Echire is the flagship factory for the company, specializing in *Beurre De Baratte*. Butter churned in wooden churns.

The people at Echire were very generous with information they shared on knowledge about AOP (Appellation D'origine Protégée) butter making. There is very strict laws determining the production of butter in France, every process of the production is protected to maintain the integrity of the product.

Whole milk was purchased from local farms and taken to the main factory at Celles-sur-Belle for processing. The cream is separated, the skim milk is sold to a drying factory for milk powder. The raw cream is transported to Echire. It is here that the cream is pasteurized and made into butter. The fermentation process does not change with the seasons, as it is a protected method. A commercial freeze-dried culture is used, the cream is matured at a lower temperature for a longer time. The churning of the cultured cream takes about 45 minutes for 1,800 liters and a further 2.5 hours to wash and work the moisture out. The Buttermilk is sold to the same drying factory that the skim milk is sold to. Cream is tested for ecoli twice during the production process. Once when the cream is ready to churn and then again when the butter is ready

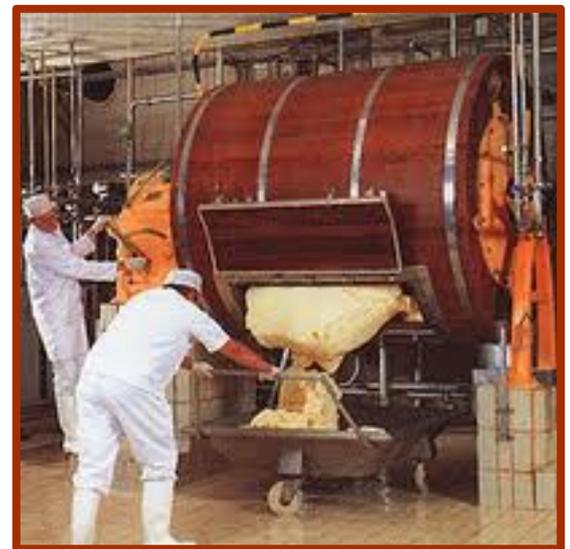


for packaging. Every step of the process is recorded on computer program to ensure product traceability, from the pasteurization to the end box of packaged goods. Further testing is required for export goods to Japan.



Two churns are run at the same time with each churn having its own production code. The process is part mechanized and part hand packaged. The butter is salted in the churn for salted butter and is added at a rate of <3%. With the ratios worked out on all of the other specs taken during the process. The butter is not reworked nor homogenized. By making with the specifications they use the butter is the perfect consistency for packaging and has low moisture content. I have tried this with my own production since returning and have found I

get similar flavour and texture. The temperature in the production room is about 16 degrees C, the butter is then moved into a separate part of the factory for packaging and storage. The Factory has a flow, each area flows on to another and you cannot go back through one part after you have left, to ensure no cross contamination occurs between rooms. Butter is churned 5 days per week, once a day in the morning after the cream has matured for 15 hours. The culturing vats are computerized to lower the temperature at certain points during the culturing process. I found a lot of similarities between my process and the French process, its just a few technical changes that have made all the difference.



Echire have quite a few products in the range, they also do some special requests from chefs. They do small 30g single serve butters and 250g larger for retail and then 500g baskets for retail and food service. The small portions and 250g are machine packaged.



Each variety has a different colour and technique, green is for demi-sel (lightly salted) and blue is for duex (unsalted). They have very distinct branding and



packaging. They also supply value added serving containers that are very popular in Japan.

Echire have a Maison du Beurre in Japan that is very busy, the Asian market is a fast growing market for dairy producers with sales increasing every quarter. The consumers are very exact in their requirements and are very concerned with food safety. The testing required to break into



these markets are stringent. You need to create an image of exclusivity to attract buyers.



Echire is well respected throughout the world as quality butter, they export to Australia, Asia, America, Canada and all of Europe.





## SEVRE ET BELLE



Located in Celles-sur-belle and part of the Echire family, this factory is the main office and production site. All of the milk is processed here. They also make a range of goats' cheese, which is a product of the region.

At the factory, butter is also made. The method is exactly the same as at the Echire factory but it is made in a stainless steel churn. Therefore it is considered a lower quality than the wooden churned butter. It is at this site that the business managers and departments are for export, marketing and quality control. At



all of the factories I visited each had a little shop that sold the products made on the premises or by the company. The shops were open from 10am until 12 and then again from 2pm until 6pm. French working weeks are not that long, and, it seems that May has 5 public holidays in the month. It was particularly hard to organize things over this time. I did receive help from the university of languages in Niort, they were extremely helpful with translation and phone calls

during my visit.

The breed of cow was also important, each area seemed to have its own particular breed. In Poitou it was the Parthenais cow, traditionally bred for butter production due to the high fat content in the milk. It is also a strong beef breed in the region and is mainly used for this purpose nowadays.





## MACHECOUL

### PASCAL BEILLEVAIRE



Pascal Beillevaire is the butter maker for Alain Ducasse the famous French chef. His butter is also made in wooden barratte, slightly smaller than the Echire churns. The process is similar to Echire, but they also make a raw cream butter and it is all packaged by hand using wooden butter molds.



Five vats ferment the cream with a commercial freeze-dried culture at about 22 deg C, slightly higher than Echire for about 48 hours. Beillevaire is not certified to any of the regulatory bodies, so they are not bound by the traditional maturation methods. The cream is then cooled to churn and the process takes about 20 minutes. They wash once to remove buttermilk, which is then sold to a pig farmer for food. They also

make crème fraiche, fromage fraise, yoghurt and a few select cheeses at this factory.

Pascal has several outlets and prefers to sell his product direct rather than have it stocked by other stores. Beillevaire also have large maturation rooms they use to mature cheese bought from small farm producers and sold in their stores all over France. Butter is hand packaged by seven workers in the butter room, each area designated to a different size and style. Again butter is salted in the churn and amalgamated by churning a couple of times to incorporate. Ecoli testing is done with every batch in house, most factories do in house testing of both moisture content and ecoli.





Fromage Beillevaire factory was situated in a regional center, it was not a particularly aesthetic outlook. They did have facilities for tourists to come and observe the production, a tour was set up and a glassed viewing platform where you can see the whole factory floor and the various areas in use making butter, cheese and yoghurt. A video of the farmers and cows being milked is played

to the group before the tour, and then visitors are taken on a walk through the factory. After the tour a tasting of products is performed and you can learn about other local products from the area. They have a more extended

tasting that includes a visit to the farm and lunch during summer months when many tourists are around. The packaging is a crude hand wrapped parchment paper with the logo printed on the pack. This does not lend well to storage, most of the butter is sold and used within a few days. The factory was opened in 1983 and has 180 employees, the stores are franchised out to people. This system has potential in Australia, a Maison du Beurre franchise perhaps.



A display of antique butter making equipment is on display for visitors to look at with explanations of what the function of them was and when they ceased being used by the factory. I can apply a lot of what I learnt here to my own factory in terms of tourism and destination experiences. They get about 20 visitors through on any one tour and have a lot of school groups coming to learn about cheese making and dairy production in general.





## BRITTANY

### LE BEURRE BORDIER

Jean Yves Bordier, known as the rock star of butter in France, is based in Brittany. The factory in Rennes is huge and very modern, brand new maturation caves are built for cheese maturation. The butter room is spacious and well laid out. Production is quite labour intensive in France and many people are employed in the factories. Hand wrapping is still considered the normal way. Not a lot of production that I saw was automated. The large factories of course are mainly automated, like large dairy factories here.



After the butter is made it is packaged in large blocks for storage, the butter is then placed on the butter worker to work in the salt and any added flavouring. Bordier make four different specialty butters, Smoked salt, seaweed, yuzu and a chili butter.

Bordier use paddles or scotch hands to mold the butter into various shapes like a cone shape and the traditional pat shape. The Maison du Beurre in St Malo is a beautiful shop in the walled city. It has a butter making display with information on production and history of butter making.





## NORMANDY

I wanted to focus on farmhouse production in Normandy, the Bienvenue a la Ferme is a great system. The maps were well laid out and easy to follow. It gave you all the details of farms and the farmers, even those that spoke English. All of the farms had little stores selling the product made on site.



### EARL LA VACHE DE LOUVICAMP

Lucie and Marc have a dairy farm, they produce milk, cream, butter, jam, milk, eggs, custard and biscuits. They supplement the farm income by hosting groups and having holiday accommodation on site. The butter is made with raw cream and churned in a wooden churn. The cream is soured first overnight to thicken



### FERME DE LA POMMERAIE

This is a dairy farm that also produces cider. I have noticed a lot of the farms also have a small restaurant and shop to showcase their wares. Most also visit local farmers markets as well. Sophie was very passionate about her property and showed me her favourite cows, she knew which gave the best cream for butter. Her butter was made by souring the cream and maturing overnight in the traditional method.

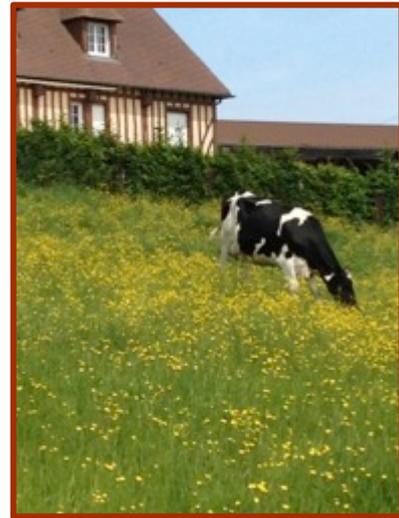
### FERME DU BRULE

Catherine and Laurent run 50 head of cattle on 75 ha. They are certified organic, the regulations for certified organic do not seem to be as hard to manage as here. The butter is made with raw cream and soured overnight.



### FERME FROMAGERIE DU CASTILLON

Corrine makes many dairy products like yoghurt, cream, butter, and cheese all farm style with raw cream. You can sell you products from your farm made with raw cream by law in France. Corrine also has pigs that she feeds on the whey and buttermilk.



### FERME DU PETIT PERET

Thierry made a lot of dairy products, his ice cream is quite well known in the region. They made butter, yoghurt and dessert creams. The farm also produced milk fed veal.

### FERME DES TERTRES

A family farm that has horses alongside the cows, as well as accommodation. The product range consists of whole milk, yoghurt, crème fraiche, butter unsalted and salted and cream cheese. The butter is churned from the crème fraiche.



### GAEC DE LA PELLARIE

Jean-Michel and Marie-Claude have a dairy as well as chickens and eggs. They produce Fromage Blanc, raw cream and raw cream butter. The butter is made from soured cream.

### FERME DU MOULIN DES CORVEES

Christine and Samuel make Camembert, butter, cream and raw milk. The farm regularly gives butter making demonstrations and on farm tours. They also produce veal, chickens and eggs. The butter is made with soured cream.





## CONCLUSION

European butter production is a way of life, culturing the cream is second nature and you would not even think of not doing it. Raw cream butter is not considered dangerous even for the medium factories, the larger producers always pasteurise because of export requirements but do not think raw cream is harmful or dangerous as we are led to believe by the food standards organization.

France takes butter production seriously, it is the law to produce it in a certain way that does not degrade the quality or change the traditional production methods. A lower temperature ferment for a longer time is the general method used by producers. A standard freeze dried culture is more commonly used the other method is to use sour milk LAB (Lactic Acid Bacteria) to inoculate the cream.

Wood or Teak in particular used in the churning and molding the butter is an important tool in enhancing the terroir of the cream when churning the butter, centuries of churning have shown that with the proper hygiene wood used in dairy manufacturing does not have any harmful effects on consumers. On farm sales and tourism are important in the education of dairy consumers and the sustainability of farms. France value the work/life balance and work to live not live to work, skim milk is fed to animals not for human consumption, butter is used in everything.

There is something to be said for a country that has laws in place to protect the integrity of the product and values these as much as the laws to protect food safety for the consumer.

